NATURAL RESOURCES - WATER SPREADING

10.

Water Supply ①

USA OPERATIONS MISSION TO SAUDI ARABIA
American Embassy - Jidda

June 7, 1954

His Excellency,
Shaikh Abdul-Aziz Sulaiman
Assistant Deputy Minister of Finance
Jidda, Saudi Arabia

Excellency:

This is in reply to your letter of May 22, regarding the Wejd water supply.

Mr. French, one of Baker's drillers, made a test of Bir Magrona and reported to Mr. Majors, drilling superintendent, that the discharge of the pump at the well yielded 100 gallons per minute or, if pumped for 24 hours, 144,000 gallons per day. The water level was lowered five inches during the test, and I would estimate from the size of the well that the water was discharging from the gravel and fractured basement rock as fast as it was being pumped while the water surface stood five inches below the level when the well was not pumped. Under these conditions, Your Excellency will note that it would be quite adequate to supply say, 100,000 gallons per day to the town. The town is small, perhaps as many as 500 people may be there at times, judging from the number of buildings. This would give each person 200 gallons per day or roughly, 10 times as much water per person as here in Jidda at the present time.

This well is the nearest sweet-water well to Wejd when I visited there. It is at an elevation (according to my altimeter survey) which should supply water by gravity flow to the town, and certainly so if a reservoir is built at the proper place. A reservoir should be included in the design to insure a reserve water supply in the event of a pump breakdown.

If the town grows, an additional supply might be needed but I am sure that finding it would be difficult and expensive. Possibly some method of treating brackish water with solar stills or ion exchange membranes will be economical at that time.

The coastal area is underlain by a narrow belt of sediments that are saliferous in outcrop and a search for additional well sites should be directed towards the wadis inland where they cross the basement rocks. I scouted around, as much as 60 kilometers to the east, and found no site more promising than Bir Magrona.

In any event, the water at Bir Magrona should be used as the most economical source. The water occurs in the gravels and in fractures in the hard, dense rocks of the basement below the gravel of the wadi. The rainfall is low - perhaps an inch each year less than Jidda, and during dry years there may be insufficient water. Still, by pumping the well and possibly, at a later date, putting in a ground water dam below the well, all the fresh water could be saved and piped to the town.

I would recommend that you have a pipeline from Bir Magrona surveyed and designed, together with a reservoir and a simple distribution system. A stand-by engine and pump should be there and the installation protected from sails. Drilling a well and attempting to service a deep-well pump, even if the geology indicated that such an installation were feasible, would be difficult, time-consuming, and costly. The horizontal centrifugal pump with surface engine can be serviced and maintained locally. I studied the area as completely as possible and I do not believe that anything would be gained by additional geologic work there. I would be very glad to discuss all I know about the region if Your Excellency wishes.

Please accept my respects.

Sincerely yours,

GB

Glen F. Brown, Chief
Natural Resources Division

GFBrown:mep

USA OPERATIONS MISSION TO SAUDI ARABIA
American Embassy - Jidda

May 31, 1954

Mr. Tom I. Dudley
Chief, Range Resources Development
USA Operations Mission to Jordan
Amman, Jordan

Dear Tom:

Thank you for your letter of May 19th and the enclosed copies of the Waterspreading Manual. The Department is to be complimented on the publication of this Manual, for I am sure it will be of much information and service to Arabic-speaking technicians and administrators.

I should like to take this opportunity of expressing our appreciation for the privilege of attending the fine conference arranged by Mr. French and his associates. It was quite practical, and I feel confident everyone went away feeling that he had profited much by being in attendance.

You have my best wishes in your new undertaking. I feel confident the good work will continue.

Sincerely yours,

W. J. Edens
Chief, Agriculture Division

WJEdens:

Walter Spending 1

TELEGRAM

Foreign Service of the United States of America

OUTGOING

CHARGE:

UNCLASSIFIED
Classification

Control:

DATE: April 19, 1954

TO: AmEmbassy, Athens

For Mace from Corson.

Sent Athens ONE rptd info Washington 437.

Ayers available one week approximately May 20. Letter follows.

WADSWORTH

HJCorson
TTTaylor:o

UNCLASSIFIED
Classification

☆ U. S. GOVERNMENT PRINTING OFFICE: 1952 - 220210

U.S.

TELEGRAM

Foreign Service of the
United States of America

OUTGOING

CHARGE:

UNCLASSIFIED
Classification

Control: 363

DATE: April 19, 1954

TO: ConGen, Dhahran

For Barham from Corson.

Three visitors from Washington not visiting Dhahran as planned.

WADSWORTH

HJCorson
WJEdens:o

UNCLASSIFIED
Classification

☆ U. S. GOVERNMENT PRINTING OFFICE: 1952 - 220210

~~Info: Cannon~~

Waterspreading

SECSTATE APRIL 170144Z, 1954

USFOTO 335

UNCLASSIFIED APRIL 171031Z, 1954

SENT JIDDA USFOTO 335 RPTD INFO ATHENS USFOTO 562

For Dr. Ad Ayers - Jidda.

Greece has requested visit and Department Agriculture approves your spending up to one week Greece but desires return end first week June. Advise Mace, Athens, info here.

RAND

LSA

DIST:

Ambassador
FOA - Action
Lindquist
File

Action: Ayers

UNCLASSIFIED

Watson

TELEGRAM

Foreign Service of the United States of America

OUTGOING

CHARGE:

UNCLASSIFIED
Classification

Control:

DATE: April 19, 1954

TO: AmEmbassy, Baghdad

For Hammer from Corson.

Sent Baghdad 21 rptd info Washington 438.

Ayers and Larsen arrive LH April 21, 9:30 AM.

WADSWORTH

HJCorson
TFTaylor:c

UNCLASSIFIED
Classification

a/ Corr. ~~NAC~~ Info: Corson (2)

TELEGRAM

Foreign Service of the
United States of America

INCOMING

UNCLASSIFIED
Classification

FROM: SECSTATE

Control: USFOTO 297
Recd: March 130852Z

Date: March 12/130524Z, 1954

SENT TRIPOLI USFOTO 221 CAIRO USFOTO 401 JIDDA USFOTO 297 BAGHDAD USFOTO 391 AMMAN USFOTO 441 BEIRUT USFOTO 366 ISTANBUL USFOTO 49 ANKARA USFOTO 641

Oalf Aamodt departing BOAC 51-IDL/LON, 3/16; BOAC 251, Lon/Tip, 3/17; holding open tickets for travel TIP/CAI/JED/BGH/AMM/BEI/IST/LON/IDL/DCA. Upon completion business Tripoli will require assistance in securing onward reservations and visas.

STASSEN

lms

DIST:

Ambassador
FOA - Action
Lindquist
File

Action: ~~Taylor~~ Edna

UNCLASSIFIED
Classification

☆ U. S. GOVERNMENT PRINTING OFFICE: 1953 - 242207

With Spreading

Info! Carson

BAGHDAD April 130720Z, 1954

USOM 1

UNCLASSIFIED April 131346Z, 1954

20, Jidda.

For Corson.

Ayers now in Cairo. No information on Pachanec.

WIENS

lsa

DIST:

Ambassador
FOA - Action
Lindquist
File

Action! - Edens.

UNCLASSIFIED

Water spreading ~~Info. Corso~~ HC (2)

TELEGRAM

Foreign Service of the
United States of America

INCOMING

UNCLASSIFIED
Classification

Control: USOM URN
Recd: April 110924Z

FROM: BAGHDAD

DATE: April 101405Z, 1954

For Ayers.

USOM 19, Cairo.

Concur suggested Bates visit Iraq.

WIENS

lsa

DIST:

Ambassador
FOA - Action
Lindquist
File

action Ayers.

UNCLASSIFIED
Classification

TELEGRAM

Foreign Service of the
United States of America

OUTGOING

CHARGE: UNCLASSIFIED
Classification

Control: 20

DATE: April 8, 1954

TO: AmEmbassy, Baghdad

For Wiens from Corson.

Inform soonest Ayres arrival date Jidda. Water spreading team has not arrived.

WADSWORTH

HJCorson
WJEdens:e

UNCLASSIFIED
Classification

☆ U. S. GOVERNMENT PRINTING OFFICE: 1952 - 220210

water spread [illegible] Larson

TELEGRAM

Foreign Service of the
United States of America

INCOMING

UNCLASSIFIED
Classification

Control: USOM 13
Recd: April 7, 1954

FROM: CAIRO

Date: April 7, 1954

Sent Jidda USOM 13 rptd info Department TOUSFO 426

ETA Aamodt, Larson, Ayers MS 761 April 11.

STEVENS

lea

DIST:

Ambassador
FOA - Action
Lindquist
File

action Edms.

UNCLASSIFIED
Classification

USA OPERATIONS MISSION TO SAUDI ARABIA
American Embassy - Jidda

April 8, 1954

H.R.H. Prince Sultan Bin Abdul-Aziz
Minister of Agriculture
Kingdom of Saudi Arabia
Jidda

Your Highness:

A Range Management and Water Spreading Conference will be held in Amman, Jordan, from May 3 until May 23, 1954. This conference is being sponsored by the Foreign Operations Administration, and Arabic-speaking countries of the Middle East are invited to send at least one Ministry official and one or more technicians for training.

Travel to and from Amman is to be paid by each participating country, but per diem expenses while in Amman will be provided by the Foreign Operations Administration. It is expected that Mr. Schwan, our Desert Range Conservationist, will attend this conference, and Mr. Al Betien and others you may designate are cordially invited to attend. The training should be of much value to them.

It is important that we inform the Foreign Operations Administration, Washington Office, immediately whether Mr. Al Betien can attend the conference. A reply by return mail will be appreciated.

Please accept my respects.

Sincerely yours,

W. J. Edens
Chief, Agriculture Division

WJEdens:o

TELEGRAM

Foreign Service of the United States of America

OUTGOING

UNCLASSIFIED
Classification

CHARGE:

Control: 14

TO: AmEmbassy, Amman

DATE: April 4, 1954

From Corson. Wallach

AMMAN USFOTO 532. Sending Schwan, our Desert Range Conservationist, to Amman conference. As Ministry officials will not return until latter part April from meeting Council Ministers being held Riyadh, impossible arrange trainee participation.

WADSWORTH

HJCorson
WJEdens:o

UNCLASSIFIED
Classification

☆ U. S. GOVERNMENT PRINTING OFFICE: 1952 - 220210

TELEGRAM

Foreign Service of the
United States of America

INCOMING

UNCLASSIFIED
Classification

0101262
Date: March 31, 1954
Control: USFOTO 318
Recd: April 1, 1954 1301Z

FROM: SECSTATE

SENT AMMAN USFOTO 532 BAGHDAD USFOTO 426 Beirut USFOTO 390 TEHRAN USFOTO 1119 Jidda USFOTO 318 Karachi USFOTO 756 Tripoli USFOTO 236 Kabul USFOTO 223

Training Waterspreading Technicians in Middle East.

Amman USFOTO 434 Beirut USFOTO 361 Baghdad USFOTO 361 TEHRAN USFOTO 997 Karachi USFOTO 691 Kabul USFOTO 194 Jidda USFOTO 288 Tripoli USFOTO 213.

Imperative mission cable this week requested nominations and biographic data in view of requirements security clearance processing for technicians. If necessary you may waive suggested minimum technician qualifications if technician identified with some aspect range management. Repeat information Amman.

STASSEN

DIST
  Ambassador
  FO A-Action
  Lindquist
  File

Action: Edens

UNCLASSIFIED
Classification

☆ U. S. GOVERNMENT PRINTING OFFICE: 1953 - 242207

TELEGRAM

Foreign Service of the
United States of America

OUTGOING

UNCLASSIFIED
Classification

CHARGE:

Control: TOUSFO #381

TO: FOA/W

DATE: April 1, 1954

USFOTO 288. Sending Schwan to Amman conference. As Ministry officials will not return until latter part April from meeting Council Ministers being held Riyadh, impossible arrange trainee participation.

CORSON

HJCorson
WJEdens:c

UNCLASSIFIED
Classification

☆ U. S. GOVERNMENT PRINTING OFFICE: 1952 - 220210

ELEGRAM

Foreign Service of the
United States of America

Info: [illegible]

INCOMING

UNCLASSIFIED

Classification

Control: USFOTO 288

FROM: SECSTATE

Recd: March 090034Z

Date: March 08/090452Z, 1954

SENT AMMAN USFOTO 434 BEIRUT USFOTO 316 JIDDA USFOTO 288 BAGHDAD USFOTO 381 TRIPOLI USFOTO 213 CAIRO USFOTO 392 TEHRAN USFOTO 997 KARACHI USFOTO 691 KABUL USFOTO 194

Subject: Training Water Spreading Technicians in Middle East.

USFOTO A-22 Olson letter 8/14/53. Implementation earlier proposal (RefAgram and letter) continue in Near East Training Water Spreading as related range improvement made possible by kind invitation Hashimite King of Jordan and cooperation USOM/J after consulting Embassy USOM requested extend invitation to proper Government Ministry for participation one.

Government official range management leaders conference and three technicians training course on water spreading scheduled Amman May 3-23, 1954. Airpouched March 5 detailed information including draft agenda and conference, training course arrangements, schedule of country visits by FOA Teams for study and consultation on water spreading and range management country programs. First week of Sessions May 3-8 aimed at Ministery of Agriculture Officials, second and third week May 10-21 aimed at training technicians in designing and developing water spreading installations utilizing both mechanical and hand labor methods. Govt official permitted attend training session and technicians urged to attend first week conference. Urge one USOM technician consultant range improvement and water spreading accompany country delegation. Technicians should have some engineering knowledge at least use of transit and preferably some knowledge of English. Per diem to be paid from regional project fund appropriation symbol 72-112/41019 allotment symbol 0-405020, for technicians and Government leaders established at the rate of $11 while in Amman $7 while stationed project sites in Jordan but subject to final confirmation. Travel costs delegations to and return country paid by participating countries security clearances required for technicians participating in training course in accordance with recent USFOTO Circular L-13. Security clearances not required Govt leasers attending first week conference. In interest of prompt clearance, request advance cabled info soonest of technicians participating as follows: (a) Complete name and address (B) Present position; (C) place and date of birth; (D) Names of organizations jointed, past and present. Allowance of minimum thirty day clearance processing required. Biographic data for 582 each participant should follow each cable soonest.

STASSEN

lms

DIST:
Ambassador
FOA - Action Lindquist File

Classification

Action: [illegible]

☆ U. S. GOVERNMENT PRINTING OFFICE: 1953 - 242207

ELEGRAM Foreign Service of the United States of America

OUTGOING

UNCLASSIFIED
Classification

CHARGE:

Control: TOUSFO #381

TO: FOA/W

DATE: April 1, 1954

USFOTO 288. Sending Schwan to Amman conference. As Ministry officials will not return until latter part April from meeting Council Ministers being held Riyadh, impossible arrange trainee participation.

CORSON

HJCorson
WJEdens:

UNCLASSIFIED
Classification

☆ U. S. GOVERNMENT PRINTING OFFICE 1952 - 220210

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TELEGRAM

Foreign Service of the United States of America

OUTGOING

CHARGE:

UNCLASSIFIED
Classification

Control: 13

DATE: March 28, 1954

AmEmbassy, Cairo

For Elmore from Corson.

USOM 11. Since meeting Council Ministers will not be over for several weeks, shall appreciate your detailed comments our draft water development agreement by regular airmail.

WADSWORTH

HJCorson:o HC

UNCLASSIFIED
Classification

Info - Carson

TELEGRAM

Foreign Service of the
United States of America

INCOMING

UNCLASSIFIED
Classification

Date: March 25, 1954
Control: USOM 6
Recd: March 25, 1954

FROM: AMMAN

For Eiens from Ayers.

Arrival may be delayed until April 5 to coincide with water spreading team.

WELLING

DIST

- Ambassador
- FOA-Action
- Lindquist
- File

action: - Elens

UNCLASSIFIED
Classification

☆ U. S. GOVERNMENT PRINTING OFFICE: 1953 - 242107

USA OPERATIONS MISSION TO SAUDI ARABIA
Jidda

March 30, 1954

Your Highness:

I believe you are familiar with the work done by Mr. Al Batein of your Ministry and Mr. Schwan of FOA relative to improving grazing lands for livestock in Saudi Arabia. Messrs. Al Batein and Schwan have tentatively selected three areas where improvement test plots can be established when Project Agreement No. 2 (Range Management) has been signed by you and our Director.

On April 5, a team of three United States experts in range management and water spreading will arrive in Jidda. This team is visiting several middle eastern countries. The purpose of their visit will be to assist in planning and getting underway work which is essential to revegetating grazing areas. It is hoped that one or two field trips can be arranged while these experts are here so that members of our combined staffs may profit by their visit and assistance.

We hope you will find time to meet the above mentioned experts. In addition to Mr. Al Batein, we also hope someone of your immediate office will be able to be present at conferences and go on the field trips. I believe this would be found of considerable value.

Assuring you of my desire to cooperate in all matters, I am

Very truly yours,

W. J. Edens, Chief
Agriculture Division

H.R.H. Prince Sultan Bin Abdul Aziz
Minister of Agriculture
Kingdom of Saudi Arabia

HJCorson
WJEdens/pa

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USA OPERATIONS MISSION TO SAUDI ARABIA
Jidda

March 30, 1954

Mr. Cedric H. Seager
Acting Regional Director
Near East, South Asia & Africa Operations
Foreign Operations Administration
Washington 25, D. C.

Dear Cedric:

This is in reply to your letter of March 5, which arrived here only a few days ago, relative to the "Plan for Country Visits for Study and Consultation on Water Spreading and Range Management Programs." We are looking forward to the team's visit with much anticipation.

Saudi Arabia has some rugged problems in the field of range management and we are very glad to have Messrs. Aamodt, Ayers and Larson come to our assistance as we study and make plans for action. The Agriculture Division will do its best to comply with the request for summary data from all technicians; however, information desired is very meager.

Plans are being made for appropriate field trips which will provide a review of actual situations, necessary to determine action programs. Every effort will be made to make the team's visit profitable to this country and all concerned.

Yours very sincerely,

HJC

Harland J. Corson
Director
USA Operations Mission to Saudi Arabia

HJCorson
WJEdens/pa

FOREIGN OPERATIONS ADMINISTRATION
Washington 25, D.C.

March 5, 1954

ans 3/30

H/c

Mr. Harland J. Corson
Director, U.S.A. Operations Mission to Saudi Arabia
c/o American Embassy
Jidda, Saudi Arabia

Dear Mr. Corson:

Enclosed is a copy of "Plan for Country Visits for Study and Consultation on Waterspreading and Range Management Programs." The personnel and schedule of the visiting FOA teams appears on the last page of this plan. Despite the fact that the teams will adhere to this schedule as closely as possible, some changes will likely be nedessary, in which case you will be informed as soon as possible.

If full advantage is to be taken of the limited time in which this team is available to each country, it will be vital that the USOM personnel and country agriculturists assemble in advance the pertinent available data called for and make any necessary reconnaissance trips to choose (a) routes of travel, (b) proposed sites for the purposes mentioned in the plan, and (c) problem areas to be studied. Considerable elasticity in arrangements is needed so that any desirable last minute changes can be made after the team makes its initial contact.

This team will wish to spend most of its time in the field. They do not wish to make a general tour. Both trips and discussion time should be planned to accomplish the listed objectives in the most direct manner. The team will be most effective if it is used in furthering your own country program.

Sincerely yours,

Cedric H. Seager
Acting Regional Director
Near East, South Asia & Africa Operations

Enclosure
As mentioned above.

Mr Edens

H/c

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
USA OPERATIONS MISSION TO SAUDI ARABIA
Jidda

March 30, 1954

Mr. Cedric H. Seager
Acting Regional Director
Near East, South Asia & Africa Operations
Foreign Operations Administration
Washington 25, D. C.

Dear Cedric:

I have just received your letter dated March 11. I wish to inform you that arrangements have already been made with Sadek Husseini to participate in the meetings and trips while the three-man team of experts on water spreading and range management is with us here. We did not know that Mr. Husseini worked with Messrs. Aamodt, Larson and Ayers but, of course, we did know that his primary interest while in the States was that of water spreading and range management and, consequently, we wanted to have the advantage of his experience and knowledge applied here while the above-mentioned gentlemen are in Saudi Arabia.

Sincerely yours,

HJC

Harland J. Corson
Director
USA Operations Mission to Saudi Arabia

HJCorson/pa

Corson
Edms

FOREIGN OPERATIONS ADMINISTRATION
Washington 25, D.C.

Ans 3/30

1 copy only

March 11, 1954

Mr. Harland J. Corson
Director, USA Operations Mission to Saudi Arabia
c/o American Embassy
Jidda, Saudi Arabia

Dear Mr. Corson:

In connection with the forthcoming visit of a three-man team of specialists to Saudi Arabia to study and confer on waterspreading and range management programs, it would be helpful if Sadek Husseini could join this party in Saudi Arabia. The recent experience that Mr. Husseini gained in the United States along these lines would make him a valuable local member of the team.

His close working acquaintance with Aamodt, Larson, and Ayers will enable him to anticipate the type of assistance they will need and the type of schedule that should be arranged.

Sincerely yours,

Cedric H. Seager.
Cedric H. Seager
Acting Regional Director
Near East, South Asia & Africa Operations

P.S. I think I need scarcely tell you how highly Mr. Husseini was regarded by all with whom he came in contact over here.

CHS.

Geological Reconnaissance from Medina to Ma'an
Along the Abandoned Hejaz Railroad

Eleven wells were noted along the route and samples of water were collected for analysis. Pumps could be installed easily in them, the depth to water ranging from three to 72 feet beneath the surface of the land.

Water in the hard crystalline rocks south of Al'Ula is scarce, and water for the railroad must come from alluvial gravels in Wadi Hamdh and tributary wadis. The large supplies lie in lower sections of the sandstone at Al'Ula and northward. Artesian water at Tebuk has possibilities for agricultural development.

In addition to water, fragments of an iron-bearing formation, a limestone series, and sedimentary beds of an age comparable to the phosphate beds in Trans-Jordan were seen. Studies of these formations may justify development of materials to be hauled on the proposed railroad.

Glen F. Brown, Chief
Natural Resources Division

February 28, 1954

Jan. 28, 1954

H.R.H. Prince Sultan Nin Abdul-Aziz
Minister of Agriculture
Kingdom of Saudi Arabia
Jidda

Your Highness:

The water development program I envisage needed to carry out the wishes of H.R.H. King Saud ibn Abdul Aziz, beginning March 1, 1954, and continuing at least to June 30, 1956, will cost as follows:

Total drilling, exploration and development (20 rigs)	$3,677,815
Drilling department compounds	205,000
Aerial photography and compilation	1,819,525
Field assistance to technicians	118,500
Pump and well maintenance	190,000
Total -	$6,010,840

The Government of the United States of America has indicated that it will contribute $2,000,000 to this program, leaving a difference of $4,010,840 as the net cost to your Government. In addition, the Government of the United States will attempt to contribute funds to pay the salaries and other expenses of American technicians needed to carry out the program. Sufficient funds are currently available this fiscal year, ending June 30, and sufficient funds are being requested from the Bureau of the Budget and the Congress for the period July 1, 1954 to June 30, 1955, but if this money is not allotted in full, it may be necessary to request that whatever is available be supplemented from this joint fund. The cost estimates for the drilling portion are based on operating costs of the Baker Organization during the last six months of their contract and checked by an independent estimate submitted by Mr. Charles Buck of Morrison-Knudsen. The cost of photography and map compilation are based on figures supplied by Aero Service Corporation and checked by costs of similar work currently being done in the United States andelsewhere. I would like to make the program sound enough to save sufficient money to pay whatever might be needed for technicians. In other words, I have not added money to this budget estimate to supplement costs of technicians.

In addition to the above estimate of cost for ground water development, gaging stations to measure desert floods, and water levels in wells, and meteorological stations to measure moisture in the air, rainfall, and temperature variations are needed. The Government of the United States will supply the instruments provided your Government can pay the local costs of installation, including shelters, and the maintenance costs. I estimate that installation and maintenance will cost 197,000 riyals for your budget year.

You will note that the drilling program costs given above will include costs for other proposals you may be considering such as exploration for water for Riyadh, Anaiza, and a possible ground water dam in Wadi Fatima. In addition, two dams are worthy of prime consideration. I consider that a dam at Abha, and the Akima dam at Taif are justified and most likely to yield early returns. These are, I believe, of prime importance to your water program and the Government of the United States is willing to contribute $250,000 to a joint fund to assist you in building them as quickly as possible. The Akima dam may cost 1,000,000 riyals and the Abha dam may cost __________ riyals, leaving a difference of ____________ riyals to be included in your budget.

I do not know whether or not the Hayyir pipeline and pipelines for the water supplies for G Qizan, Qunfida, Lith, Yenbo, Um Lejj, and Wejh are in your jurisdiction. Water has been found and wells drilled for these places and pipeline construction is in various phases of installation and you may want to include completion costs in your budget.

HLC Mr Corson
Dr Edens

MEMORANDUM

TO : Mike Guido - USOM/Lebanon
Bill Meredith - Jordan
Mildred Teasley - Egypt
Norman Hummon - Libya
Conrad Hammar - Iraq
Gerald Sarchet - Pakistan
Bill Celabert - Iran
Thel Taylor - Saudi Arabia

HLC

FROM : Harry L. Carr - M/PR - FOA/Washington

SUBJECT: Water-Spreading training tour

I think you'll be interested in the story and pictures beginning on page 10 of the attached "Our Public Lands", January 1954. Please put these two copies to the best use.

Inclosure:

1 book (additional tear sheet in each book) Copy to Sadik

cc: Riley
Caldwell

M/PR:HLCarr:nea

PLANE. The sheikhs and their companions enjoy the hospitality of "Gene" and "Mitch" Etchart who took them for an airplane ride to see how a waterspreading system looks from the sky.

FROM THE EAST, THEY CAME TO SEE OUR WESTERN PROJECTS

Based on Data and Pictures Prepared by WILLIAM C. MEBUS, ***Program Analyst,*** **Branch of Research and Statistics**

Twenty-three men from nine countries of the Middle East have spent most of this fall studying the various ways in which soil, water, and grass are being managed and conserved in the semiarid regions of our Western States.

Vast areas of the Middle East, from northern Africa across to the Indian subcontinent, are dry and barren. Conditions of climate, topography, soil, and vegetation are surprisingly similar to those found in many parts of our West.

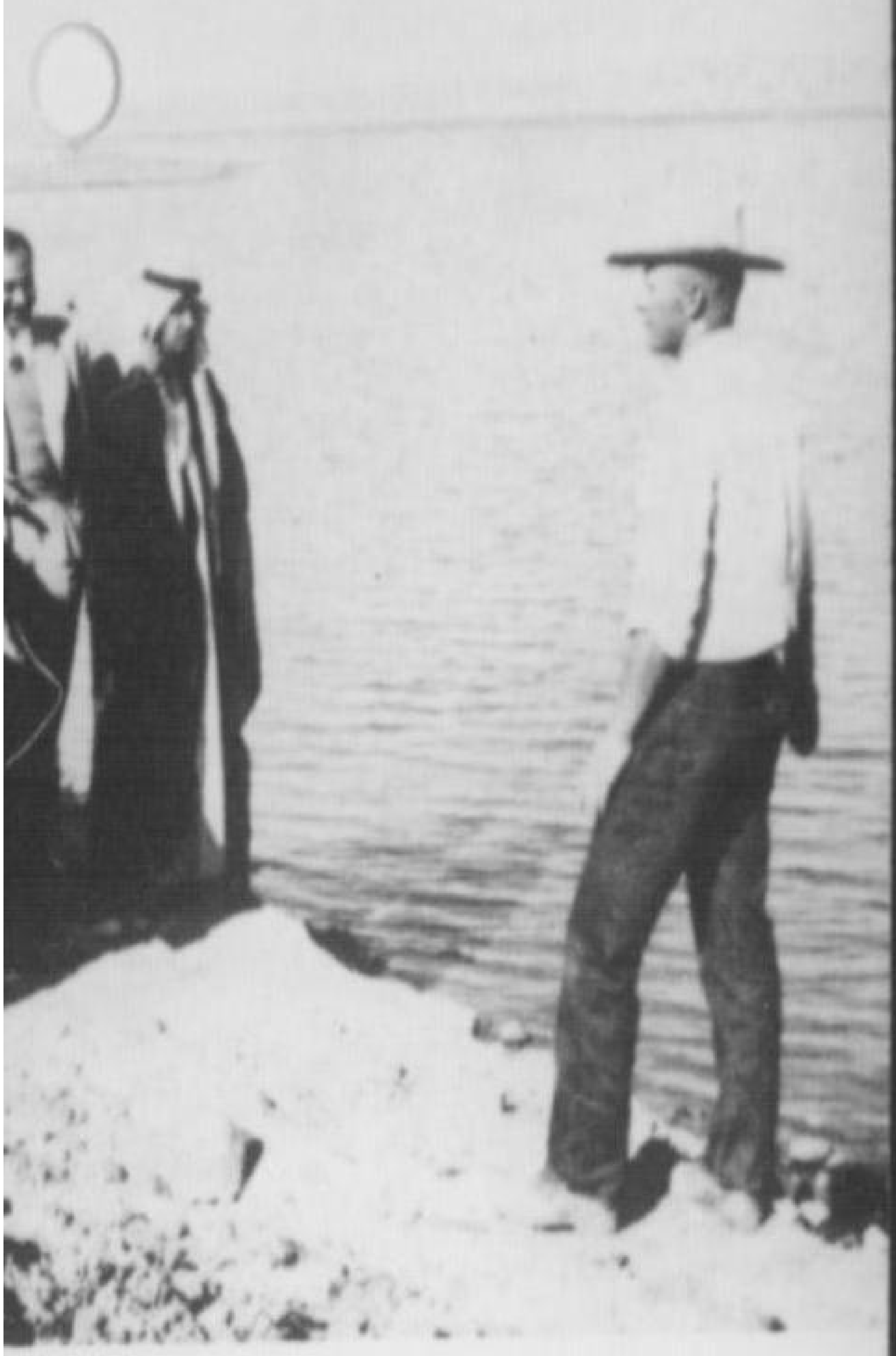
American technicians who have toured and worked in the Middle East have long believed that measures employed in the semiarid regions of the United States to conserve moisture, develop ground water, restore grass, and control grazing could work wonders in the near-desert regions of the Old World. The leading technicians of many Middle Eastern countries have also come to believe that these measures and practices might restore ranges that have been overgrazed for centuries—ranges that are wastelands today but supported large flocks and thousands of villages in ancient times.

Some of these techniques have already been demonstrated by American technicians as in the deserts east of the Jordan River, where Bedouin tribesmen have been amazed to see grass growing hip-high for the first time in centuries.

Sponsored by the technical cooperation program of the Foreign Operations Administration, a number of technicians and leaders from the Middle East have spent 3 months on a long tour of western rangelands, to see all kinds of water spreading, range management, and conservation work in actual operation on a large scale. The tour was conducted by the Bureau of Land Management, assisted by the Soil Conservation Service, the Forest Service, and the Bureau of Indian Affairs.

Led by Floyd Larson of Billings, regional chief of the Branch of Soil and Moisture Conservation, men from Jordan, Lebanon, Iraq, Iran, Egypt, Libya, Pakistan, Saudi Arabia, and Turkey made the tour. Some of the visitors are expert agriculturists and engineers, others are influential leaders among their people.

All of them expressed interest in even the smallest details of structures, techniques, machines, and practices. Machinery, especially heavy earthmoving equipment, came in for special attention, but the visitors were always alert for the kinds of



Glasgow, Mont., discusses range om the Near East.

us, Mont., shows how silt accumulat- g system has almost buried an old e. The blaze was made in 1904.

ea supporting only a light stand of

MACHINERY. Sheikh Hadid works a new model contour furrowing machine developed cooperatively by the Forest Service and the Bureau of Land Management.

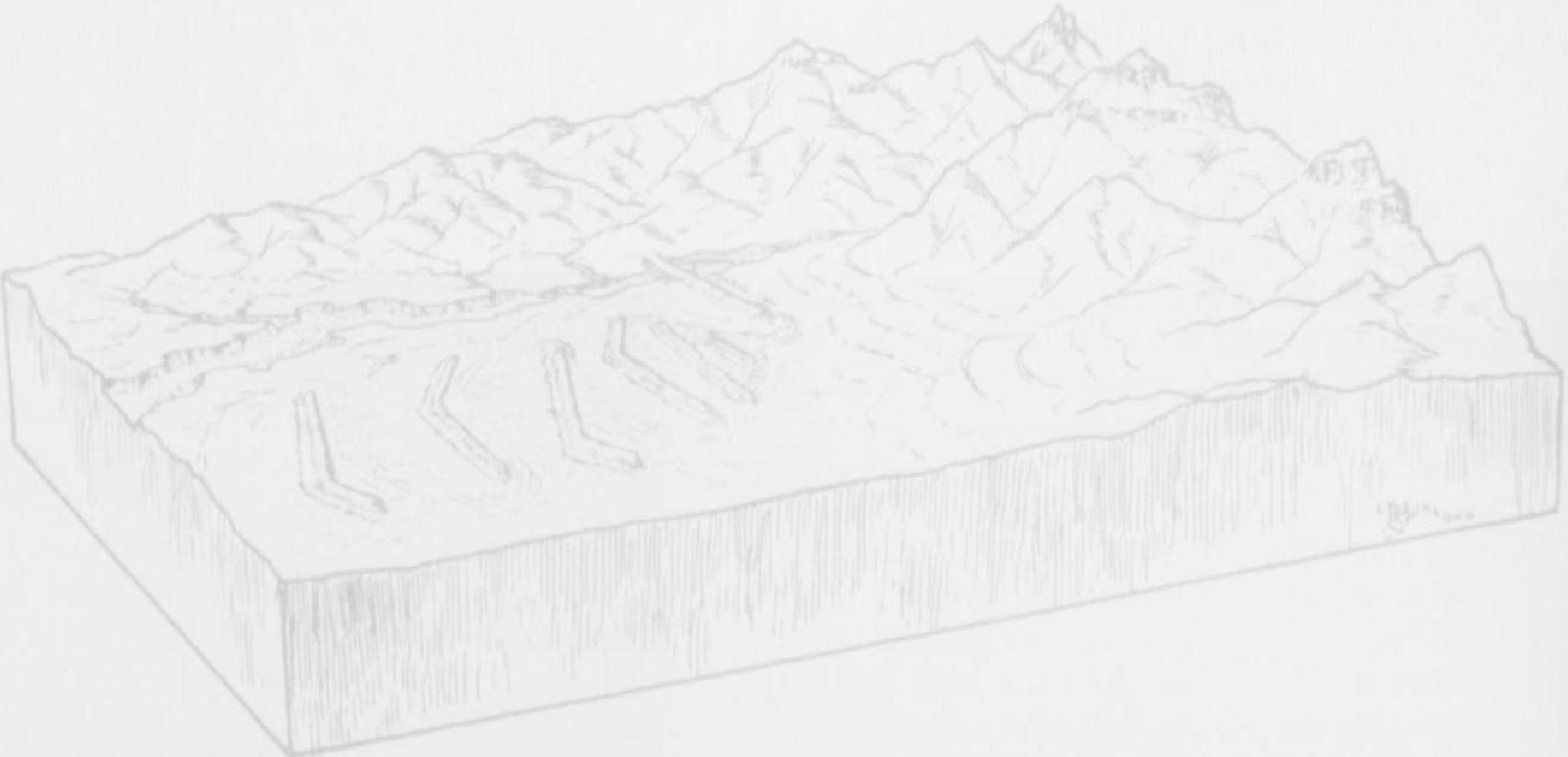
DESERT. Sheikh Hamad Ben Jazi and Sheikh Mohammed Ben Hadid find the western range much like the desert grazing lands of their native Jordan.

INTERCHANGE OF KNOWLEDGE BETWEEN EAST AND WEST HELPS TO PERPETUATE THE GOOD EARTH AND TO PROMOTE WORLD PEACE

SAGEBRUSH. Results of sagebrush removal and reseeding are demonstrated by Area Manager Dick Greenland (extreme right) of Cedar City, Utah.

DETENTION DAM. The Egyptian delegation takes notes on a detention dam outlet structure in Wyoming.

BARBECUE. They "supervise" the preparation of a barbecued lamb donated by a rancher for a Leader-Rancher feed.



STREAM GAUGING. Waheed Akhtar of Pakistan receives a lesson in stream gauging while his friends observe the method used.

Ag - Desert Range Conservation

File 1
2
Chron.

Jidda, Saudi Arabia
September 14, 1953

MEMORANDUM

TO: Dr. W. J. Edens, Chief, Agriculture Division

FROM: John A. Dunaway, Acting U.S. Director of Technical Cooperation in Saudi Arabia

SUBJECT: Water Spreading

I have read your memo of September 8 on this subject with great interest and am forwarding a copy to Washington for further consideration. I have no doubt as to the benefits to be attained from water spreading as currently practiced by farmers settled on the land and who use diversion dams as a method of irrigation. I have, however, grave doubts as to the efficacy of this procedure on the open range used by the nomads. Part of this doubt arises from scarcity and irregularity of the rainfall and part stems from the difficulty to be encountered in securing cooperation of the Bedouin people.

However, since I am to be in charge only a few days, I suggest that you await the arrival of the Director before making any plans which involve additional funds and personnel. In the meantime you are authorized to explore this subject with SAG officials and in the course of conferences you will no doubt gain a better idea of the project as well as the degree of cooperation you can expect from them. Mr. Schwan's accompanying memo seems to me sound and I believe that as a result of further field experience he will be in a better position to outline a workable program plan. I believe, however, that field trips should not be confined to the settlements along the wadis, but that he should have experience with one or more Bedouin tribes in their seasonal migrations.

JAD

JADunaway:o

File 1

Desert Range

Jidda, Saudi Arabia

MEMORANDUM September 8, 1953

TO: Mr. John A. Dunaway, Acting U. S. Director of Technical Cooperation in Saudi Arabia

FROM: W. J. Edens, Chief, Agriculture Division

SUBJECT: Improving Range Land in Saudi Arabia by Water Spreading, Revegetation and Range Management

Recently we have received much encouragement via letters, literature, and the scheduling of a leader training program in the U. S. concerning the improved use of range land by water spreading and revegetation. This memorandum is to recommend that we give serious consideration to such a program of work, and if within the scope of our '54 budget or other fund sources initiate activities preliminary to water spreading and revegetation on lands in important grazing areas. Perhaps a small project for demonstration purposes could be started this year in one of the nearby wadis.

Mr. Sadek Husseini is now enroute to the U. S. to participate in a leader training program in water spreading and revegetation to be conducted throughout the arid west during the next three months. On the basis of this experience and his influence here in government, I feel he can generate much interest in improving range land.

A program of range improvement by water spreading, grass reseeding, range management, and the development of livestock watering places in Saudi Arabia will involve institutionalized economic and social patterns which must be dealt with so that there will be common purpose and achievement. There must be crystal clear understanding on the part of the central government, farmers, herdsmen, tribal leaders and TCA what such a program includes, and the part each must play.

Preliminary steps to developing a program would be discussions with the host government to determine its interest and willingness to sponsor such a project. In general, this would involve being sure the Saudis understand the possibilities and benefits of water spreading and revegetation, and such practices must be carried out only under carefully studied and controlled conditions. Also, it should be understood that such a program of work must be limited to those areas of the country which

(a) "benefit annually from at least one heavy torrential rain generating considerable run-off;

(b) "have topographic situations concentrating run-off in places where it may be captured and spread by inexpensive earth structures over flat plains;

(c) "have suitable types of soil on the spread area;

(d) "provide an opportunity through controlled grazing to ensure successful range revegetation;

(e) "permit the organization of the benefiting community for:

  (1) seasonal use of the water spreading area;

  (2) agreement between competing tribal groups as to the range rights;

  (3) enforcement of conservation use;

  (4) the construction of the earth dams and dikes largely through contributed labor and the acceptance of responsibility for the continued maintenance of the earth structures."

Prior to initiating a program to improve range use and management, it must be clearly understood by the host government that:

(a) The responsibility of the program will be its own, and this responsibility should be centered in the Department of Agriculture where appropriate leadership and technical services must be provided;

(b) cooperation of farmers and tribal leaders with the central government is essential, and the host government must take the initiative to bring about this cooperation;

(c) to be successful, such an undertaking must be the product of the community's labor and of its agreement.

(d) if a community, or area, develops a range program, it may be necessary for the central government to help protect the rights of farmers, herdsmen and tribal leaders relative to range improvements they have made for their livestock and supervise the proper use of improved range land, for without adequate range control, overgrazing will quickly destroy all vestiges of grass and dikes;

(e) where water spreading and revegetation projects are initiated by people of any community, it is essential that construction of dikes, dams and other structures be provided by their own labor with equipment they ordinarily use. Mechanized equipment should not be used unless the central government stands ready to keep such equipment on hand and see that all repair work to structures is performed, or the farmers and herdsmen find it economically feasible to cooperate in providing power equipment;

(f) to receive permanent benefits of water spreading and range revegetation, the young men of the cooperating community, or area, must be trained in the techniques of water spreading and revegetation so such practices will be continued, and also fostered in adjoining range areas; and

(g) one or more trained technicians must be furnished as counterparts to each TCA technician, and in cooperation with given communities, furnish funds and materials essential to establishing and possibly maintaining the project.

In addition to the above statements, I am attaching a copy of a memorandum to me by Mr. Schwan.

In consideration of the above matter, I recommend that discussions be instituted with the host government, and if there is sufficient interest (1) estimate the additional personnel, supplies and equipment needed to survey and initiate a water spreading and revegetation project at a desirable location, and request additional funds of TCA to finance this cost. A water spreading and dam engineer is absolutely essential to the development of such a project. If this technician and funds can be made available, it is recommended that he and Mr. Schwan begin preliminary studies of one or more areas to be used for writing a water spreading, revegetation and range management project agreement.

It would be very appropriate to request the services of the TCA/W 3-man group available to the field, according to Mr. Olson's letter to you of August 14, 1953, for assisting in the development of water spreading, revegetation and range management in Saudi Arabia. Anytime after December 1, 1953 would be satisfactory for their arrival.

Encl - Memo from Mr. Schwan to
Dr. Edens, dated ~~Aug. 30~~ Sept. 3, 1953

WJEdens/djh

nr.

T.P.

UNITED STATES OF AMERICA
TECHNICAL COOPERATION ADMINISTRATION

January 28, 1954

H. R. H. Prince Sultan ibn Abdul Aziz
Minister of Agriculture
Kingdom of Saudi Arabia
Jidda

Your Highness:

In accordance with your request for budgetary figures in connection with the water-development program, I submit the following cost estimates.

	3/1/1954-3/1/1955	3/1/1955-6/30/1956	Total Capital Requirements
1. Drilling	SR 8,659,005	4,881,975	13,540,980
2. Drilling compounds	754,769	-------	754,769
3. Aerial photography and compilation	4,880,594	1,818,533	6,699,127
4. Field assistance to technicians	218,146	218,146	436,292
5. Pump and well maintenance	354,189	345,353	699,542
	SR 14,866,703	7,264,007	22,130,710

I understand that the Government of the United States of America is prepared to contribute to a joint fund as much as $2,000,000 for this program under the Special Economic Aid Grant, leaving a difference of SR 14,767,110 as the net cost to your Government for a period of about 2 1/4 years. In addition, the Government of the United States will attempt to contribute funds to pay the salaries and other expenses of American technicians needed to carry out the program. Sufficient funds are currently available this fiscal year, ending June 30; and sufficient funds are being requested from the Bureau of the Budget and from the Congress of the United States for the period July 1, 1954 to June 30, 1955. The drilling costs are based on operating costs of Michael Baker, Jr., Inc. during the last six months of their contract and checked by an independent estimate submitted by Mr. Charles Buck of Morrison-Knudsen. The cost of photography and of map compilation is based on figures supplied by Aero Service Corporation and checked by costs of similar work currently being done in the United States and elsewhere.

In addition, gaging stations to measure desert floods and water levels in wells and meteorological stations to measure moisture in the air, rainfall, and temperature variations are needed. The Government of the United States will supply the instruments provided your Government can pay the costs of installation and maintenance of these stations. An estimation of installation and maintenance cost is SR 197,000 for your budget year.

You will note that the drilling program estimates given above will include costs for other proposals you may be considering such as exploration for water for Riyadh, Anaiza, and a possible ground-water dam in Wadi Fatima. In addition, two dams are worthy of prime consideration. I consider that a dam at Abha and the Akrima dam at Taif are justified and most likely to yield early returns. These are, I believe, of prime importance to your water program and I understand that the Government of the United States is prepared to contribute as much as $250,000 under the Special Economic Aid Grant to a joint fund to assist you in building them as quickly as possible. The Akrima dam may cost SR 875,000 and the Abha dam may cost SR 1,982,000 provided the equipment bought for one dam can be used on the other. The difference of SR 1,936,550 should be included in your budget. An engineering study of the data relating to the feasibility of a check dam at Riyadh should cost on the order of SR 55,000.

I do not know whether or not the Hayyir pipeline and pipelines for the water supplies for Gizan, Qunfida, Lith, Yenbo, Um Lejj, and Wejh are in your jurisdiction. Water has been found and wells drilled for these places; and pipeline construction is in various phases of installation. You may want to include completion costs in your budget.

To summarize, the ground-water development program for the budget year March 1, 1954 - March 1, 1955 will cost the Saudi Arabian Government 9,920,072 SR, the dam construction will cost SR 1,936,550, gaging stations will cost SR 197,000, the engineering study at Riyadh will cost SR 55,000 or a total of 12,108,622 SR exclusive of the very important FAO water-development project at Gizan. For the next fiscal year, March 1, 1955 - March 1, 1956, the groundwater program should cost your government about SR 4,847,038.

Please accept my respects.

Glen F. Brown

Glen F. Brown, Chief
Natural Resources
USAOM